# MARINE ECOLOGY
## PROGRESS SERIES

**Volume 116 (1995)**

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**Inter-Research**

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# Editorial Advisors

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## ENVIRONMENTAL FACTORS

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School of Oceanography, WB-10, Univ. of Washington, Seattle, WA 98195, USA
Physiological ecology of phytoplankton; thermophilic microorganisms

**Collos, Y.** Ⓢ
Laboratoire d'Hydrobiologie, Université de Montpellier CC 093, F-34095 Montpellier Cedex 5, France
Nitrogen metabolism of phytoplankton

**Dring, M. J.**
Biologische Anstalt Helgoland, D-27498 Helgoland, Germany
Physiological ecology of algae

**Fisher, N. S.**
Marine Sciences Research Center, State Univ. of New York, Stony Brook, NY 11794-5000, USA
Physiological ecology of phytoplankton

**Fowler, S. W.** Ⓢ
International Atomic Energy Agency, Marine Environment Laboratory, 19, Ave des Castellans, BP 800, MC-98012 Monaco Cedex
Trace element metabolism

**Haedrich, R. L.** Ⓢ
Memorial Univ. of Newfoundland, St. John's, Nfld, Canada A1B 3X9
Environmental effects on fishes (incl. deep sea)

**Kasyanov, V.**
Institute of Marine Biology, Academy of Sciences, Vladivostok 690032, Russia
Environmental effects on invertebrates; reproduction, development

**Kiørboe, T.** Ⓢ
Danish Institute for Fisheries and Marine Res., Charlottenlund Castle, DK-2920 Charlottenlund, Denmark
Physiological ecology of zooplankton, including fishes (esp. larvae)

**Lawrence, J. M.** Ⓢ
Dept of Biology, Univ. of South Florida, Tampa, FL 33620, USA
Physiological ecology of invertebrates

**Luoma, S. N.**
US Dept of the Interior, Geological Survey, Water Resources Div., 345 Middlefield Rd, Menlo Park, CA 94025, USA
Geochemical and biological factors affecting biochemical processes in invertebrates; contaminant effects on bioavailability

**McLusky, D. S.** Ⓢ
Dept of Biological Sciences, Univ. of Stirling, Stirling FK9 4LA, Scotland
Physiological ecology of invertebrates

**Meyer-Reil, L.-A.**
Institut für Ökologie, Schwedenhagen, D-18565 Kloster/Hiddensee, Germany
Environmental effects on benthic microorganisms, benthic microbial ecology

**Meyers, S. P.** Ⓢ
Dept of Food Science, Louisiana State Univ., Baton Rouge, LA 70803, USA
Physiological ecology of microorganisms

**Paasche, E.**
Dept of Biology, Univ. of Oslo, Marine Botany, PO Box 1069, Blindern, N-0316 Oslo 3, Norway
Physiological ecology of phytoplankton; primary production; benthic algae

**Rheinheimer, G.** Ⓢ
Institut für Meereskunde, Univ. of Kiel, Düsternbrooker Weg 20, D-24105 Kiel, Germany
Marine microbiology

**Riisgård, H. U.** Ⓢ
Odense Univ., Biologisk Institut, Campusvej 55, DK-5230 Odense M., Denmark
Environmental effects on invertebrates; bioenergetics of suspension feeders

**Southward, A. J.**
Plymouth Marine Laboratory, Citadel Hill, Plymouth PL1 2PB, England
Environmental effects on invertebrates

**West, J. A.**
School of Botany, Univ. of Melbourne, Parkville, Victoria 3052, Australia
Physiological ecology and reproductive biology of estuarine and marine benthic macroalgae

## PHYSIOLOGICAL MECHANISMS

**Batty, R. S.**
Dunstaffnage Marine Research Laboratory, PO Box 3, Oban, Argyll PA34 4AD, Scotland
Behavioural physiology of fish; feeding; predation of fish larvae

**Browman, H. I.**
Marine Productivity Division, Maurice-Lamontagne Institute, Dept of Fisheries and Oceans Canada, C.P. 1000, Mont-Joli, Québec, Canada G5H 3Z4
Foraging behavior and development of (sensory) organs, especially in fishes

**Brown, B. E.**
Dept of Biology, The University, Newcastle-upon-Tyne NE1 7RU, England
Physiology and ecology of corals

**Buchholz, F.**
Biologische Anstalt Helgoland, Meeresstation, D-27498 Helogoland, Germany
Physiological ecology; metabolic and thermal adaptation; zooplankton; moulting

**Burton, R. S.**
Marine Biology Research Division 0202, Scripps Institution of Oceanography, Univ. of California, 9500 Gilman, La Jolla, CA 92093-0202, USA
Population genetics; evolutionary mechanisms in populations; biochemical and molecular genetic analyses of invertebrates

**Caron, D. A.** Ⓢ
Biology Dept, Woods Hole Oceanographic Institution, Woods Hole, MA 02543, USA
Feeding, respiration and nutrient regeneration of protozoans

**Conover, R. J.**
Marine Ecology Laboratory, Bedford Institute of Oceanography, PO Box 1006, Dartmouth, N.S., Canada B2Y 4A2
Physiology and biochemistry of zooplankton

**Forward, R. B., Jr**
Duke Univ. Marine Laboratory Pivers Island, Beaufort, NC 28516-9721, USA
Environmental zoo-physiology; behavior; biological rhythms

**Gerking, S. D.**
Dept of Zoology, Arizona State Univ., Tempe, AZ 85281, USA
Fish physiology

**Henley, W. J.**
Dept of Botany, Oklahoma State Univ., Stillwater, OK 74078-0293, USA
Plant physiology; environmental effects on photosynthesis and respiration

**Holland, N. D.** Ⓢ
Scripps Institution of Oceanography, San Diego, PO Box 1529, La Jolla, CA 92093, USA
Comparative, cellular and developmental physiology

**Humphrey, G. F.** Ⓢ
CSIRO Marine Biochemistry, Building A12, Sydney Univ., NSW 2006, Australia
Photosynthesis; plankton biochemistry

**Leftley, J. W.**
Dunstaffnage Marine Research Laboratory, PO Box 3, Oban, Argyll PA34 4AD, Scotland
Physiology and biochemistry of microalgae (laboratory and field); nitrogen metabolism

**Li, W.**
Bedford Institute of Oceanography, PO Box 1006, Dartmouth, N.S., Canada B2Y 4A2
Flow cytometry; photosynthetic phytoplankton; relations between phytoplankton and heterotrophic bacterioplankton

**McLusky, D. S.** Ⓢ
Dept of Biological Sciences, Univ. of Stirling, Stirling FK9 4LA, Scotland
Osmoregulation in estuarine invertebrates

**Naylor, E.**
School of Ocean Sciences, Univ. of Wales, Menai Bridge, Gwynedd LL59 5EY, Wales
Behavioural physiology; invertebrate biology

**Pawlik, J.**
The Univ. of North Carolina at Wilmington, Wilmington, NC 28403-3297, USA
Chemical defense of invertebrates; antifouling, chemical cues

**Puiseux-Dao, S.**
Laboratoire de Cytophysiologia végétale et de Toxicologie cellulaire, Université de Paris VII, 2 Place Jussieu, F-75251 Paris Cedex 05, France
Ecophysiology and toxicology of algae; cellular biology; behavior of algae

**Rivkin, R. B.**
Ocean Sciences Centre, Univ. of Newfoundland, St. John's, Nfld, Canada A1C 5S7
Phytoplankton physiology and ecology

**Shick, J. M.** Ⓢ
Dept of Zoology, Univ. of Maine, Murray Hall, Orono, ME 04469-5751, USA
Physiological energetics of invertebrates, incl. metabolic calorimetry; symbioses; hyperoxia and oxidative stress; effects of UV light; sea anemone biology

**Stickle, W. B.**
Zoology and Physiology, Louisiana State Univ., Baton Rouge, LA 70803-1725, USA
Ecological physiology of animals; toxicology; free amino acid regulation; effects of hypoxia, temperature and salinity; sublethal responses to pollution; tolerance limits; oil pollution;

**Videler, J. J.**
Dept of Marine Biology, Univ. of Groningen, PO Box 14, 9750 AA Haren, The Netherlands
Swimming dynamics of plankton; activity pattern and reproductive strategies of fishes; energy budgets of herbivores

**Webb, P. W.**
Univ. of Michigan, School of Natural Resources, 430 East University, Ann Arbor, MI 48109-1115, USA
Swimming mechanics and energetics; vertebrate behavior and distribution; energy and material flow through animals; growth and metabolism

**West, J. A.**
Dept of Plant Biology, Univ. of California, 111 Genetics Plant Biology Bldg, Berkeley, CA 94720, USA
Chemistry of red algae; molecular genetics of red and green algae

**Wieser, W.**
Institut für Zoologie der Leopold-Franzens Univ. Innsbruck, Technikerstraße 25, A-6020 Innsbruck, Austria
Physiological ecology of invertebrates

**Zhirmunsky, A. V.**
Institute of Marine Biology, Academy of Sciences, Vladivostok 690032, Russia
Mechanisms of cellular resistance and control

## CULTIVATION

**Lawrence, J. M.** Ⓢ
Dept of Biology, Univ. of South Florida, Tampa, FL 33620, USA
Nutrition of invertebrates

**Meyers, S. P.** Ⓢ
Dept of Food Science, Louisiana State Univ., Baton Rouge, LA 70803, USA
Cultivation of microorganisms and crustaceans; aquaculture; microenvironments

**Pandian, T. J.**
School of Biological Sciences, Madurai Kamaraj Univ., Madurai 625 021, Tamilnadu, India
Cultivation of decapods and fishes; bioenergetics

**Rheinheimer, G.** Ⓢ
Institut für Meereskunde, Univ. Kiel, Düsternbrooker Weg 20, D-24105 Kiel, Germany
Cultivation of microorganisms

## DYNAMICS

**Ahmed, S. I.**
School of Oceanography, WB-10, Univ. of Washington, Seattle, WA 98195, USA
Phytoplankton ecology; greenhouse gases and global ocean flux; sedimentary microbiology; mangrove ecosystems

**Alongi, D. M.** Ⓢ
Coastal Processes and Resources Program, Australian Institute of Marine Science, PMB No. 3, Townsville M.C., Q. 4810, Australia
Trophic dynamics and nutrient energetics of soft-bottom benthic food webs (particularly tropical microbes and meiofauna)

**Azam, F.**
Scripps Institution of Oceanography, Univ. of California, La Jolla, CA 92093, USA
Viral and bacterial ecology; microbial biogeochemistry

**Bak, R. P. M.** Ⓢ
Nederlands Instituut voor Onderzoek der Zee, Postbox 59, 1790 AB Den Burg – Texel, The Netherlands
Coral reef ecology

**Banse, K.**
School of Oceanography, WB-10, Univ. of Washington, Seattle, WA 98195, USA
Biological oceanography; plankton research

**Berman, T.**
Kinneret Limnological Laboratory, PO Box 345, Tiberias 14102, Israel
Phytoplankton ecology

**Bianchi, A.**
C.N.R.S. ER 223, Microbiologie Marine, Campus de Luminy – case 907, 70, route Léon Lachamp, F-13288 Marseille Cedex 9, France
Marine microbiology; ecological dynamics

**Birkeland, C.**
Univ. of Guam, Marine Laboratory, UOG Station, Mangilao, Guam 96913
Coral-reef ecology; benthic ecology

**Brattegard, T.**
Universitetet i Bergen, Institutt for fiskeri- og marin-biologi, Thormohlens gt. 55, N-5008 Bergen, Norway
Distribution and ecology of malacostracan crustaceans (esp. suprabenthic/hyperbenthic species)

**Browman, H. I.**
Marine Productivity Division, Maurice-Lamontagne Institute, Dept of Fisheries and Oceans Canada, C.P. 1000, Mont-Joli, Québec, Canada G5H 3Z4
Early life history, growth and development in fishes; fish-zooplankton interactions

**Bunt, J. S.**
4/6 McDonald Street, Potts Point, NSW 2011, Australia
Mangrove systems; reef studies

**Caron, D. A.** Ⓢ
Biology Dept, Woods Hole Oceanographic Institution, Woods Hole, MA 02543, USA
Microbial ecology; trophic relations between planktonic protozoans and other heterotrophic and photosynthetic organisms; pelagic detrital aggregates

**Collos, Y.** Ⓢ
Laboratoire d'Hydrobiologie, Université de Montpellier CC 093, F-34095 Montpellier Cedex 5, France
Nitrogen cycling and primary production

**Conover, R. J.**
Marine Ecology Laboratory, Bedford Institute of Oceanography, PO Box 1006, Dartmouth, N.S., Canada B2Y 4A2
Zooplankton biology

**Cushing, D. H.**
Ministry of Agriculture, Fisheries and Food, Fisheries Laboratory, Lowestoft, Suffolk NR33 OHT, England
Productivity of the sea; fish-population dynamics; biological oceanography

**de Jonge, V.**
National Institute for Coastal and Marine Management (RIKZ), PO Box 207, 9750 AE Haren, The Netherlands
Estuarine and coastal processes; microphytobenthos and eelgrass; process and impact of resuspension; eutrophication

**Dolan, J.**
Station Zoologique, C.E.R.O.V., BP 28, F-6230 Villefranche-sur-Mer, France
Microbial ecology, interactions of bacteria, protists and metazoa

**Elliott, M.** Ⓢ
Dept of Applied Biology, Institute of Estuarine and Coastal Studies, The University, Hull HU6 7RX, England
Structure and function of fish and benthic communities

**Feller, R. J.**
Biology and Marine Science, Belle W. Baruch Institute for Marine Biology and Coastal Research, Columbia, SC 29208, USA
Trophic dynamics and energetics of crustaceans; feeding and digestion of fishes; benthic ecology of meiofauna; ecological applications of immunology and serology

**Fenchel, T.** Ⓢ
Marine Biological Laboratory (Univ. of Copenhagen), DK-3000 Helsingør, Denmark
Population biology; microbial ecology

**Field, J. G.**
Univ. of Cape Town, Zool. Dept, Rondebosch 7700, Republic of South Africa
Dynamics of nearshore ecosystems

**Floc'h, J. Y.**
Université de Bretagne Occidentale, Lab. d'Ecophysiologie et de Biochimie des Algues Marines, Faculté des Sciences, 7 av. V. Le Gorgeu, BP 452, F-29275 Brest Cedex, France
Ecophysiology and biochemistry of macroalgae

**Fowler, S. W.** Ⓢ
International Atomic Energy Agency, Marine Environment Laboratory, 19, Ave des Castellans, BP 800, MC-98012 Monaco Cedex
Particle flux; biogeochemistry

**Fuhrman, J.** Ⓢ
Marine Biology Res. Section, Dept of Biological Sciences, Univ. of Southern California, Los Angeles, CA 90089-0371, USA
Planktonic microbial ecology. Productivity and growth of microorganisms, especially bacteria

**Furness, R. W.**
Dept of Zoology, The Univ. of Glasgow, Glasgow G12 8QQ, Scotland
Ecology of sea birds

**Furuya, K.**
Faculty of Bioresources, Mie Univ., 1515 Kamihama, Tsu 514, Japan
Phytoplankton ecology; community structure, dynamics

**Gage, J. D.** Ⓢ
Dunstaffnage Marine Research Laboratory, PO Box 3, Oban, Argyll PA34 4AD, Scotland
Benthos of deep sea and temperate coasts

**Gray, J.** Ⓢ
Institutt for Marinbiologi og Limnologi, Univ. Oslo, Postboks 1064, Blindern, Oslo 3, Norway
Soft-sediment ecology

**Haedrich, R. L.** Ⓢ
Memorial Univ. of Newfoundland, St. John's, Nfld, Canada A1B 3X9
Zoogeography; natural history of fish

**Hansen, B.**
Roskilde Univ., Institute I, Life Sciences & Chemistry, PO Box 250, DK-4000 Roskilde, Denmark
Laboratory and in situ studies on zooplankton; secondary production (grazing, growth, energetics, feeding behaviour)

**Harding, G. C.**
Marine Ecology Laboratory, Bedford Institute of Oceanography, PO Box 1006, Dartmouth, N.S., Canada B2Y 4A2
Crustacean ecology (incl. deep sea)

**Heck, K. L., Jr** Ⓢ
Marine Environmental Sciences Consortium, Dauphin Island Sea Lab., PO Box 369-370, Dauphin Island, AL 36528, USA
Benthic ecology, emphasis on seagrass ecosystems

**Holm-Hansen, O.** Ⓢ
Scripps Inst. of Oceanography, Univ. of California, La Jolla, CA 92093-0202, USA
Polar ecology; chemical oceanography; photosynthesis

**Hoppe, H.-G.**
Institut für Meereskunde, Univ. Kiel, Düsternbrooker Weg 20, D-24105 Kiel, Germany
Microbiology, including methods; microbial plantology

**Hughes, R. N.** Ⓢ
School of Animal Biology, Univ. College North Wales, Bangor, Gwynedd LL57 2UW, Wales
Ecological energetics (particularly feeding)

**Karlson, R. H.**
School of Life and Health Sciences Ecology Program, Univ. of Delaware, Newark, DE 19716, USA
Population and community ecology of benthic invertebrates

**Kiørboe, T.**
Danish Institute for Fisheries and Marine Res., Charlottenlund Castle, DK-2920 Charlottenlund, Denmark
Biological oceanography; physical and biological processes in the pelagial with emphasis on copepods and fish larvae

**Klumpp, D.**
Australian Institute of Marine Science, PMB No. 3, Townsville M.C., Q. 4810, Australia
Trophodynamics; animal nutrition, energy and nutrient budgets; nutrient cycling; primary productivity; fish biology; seagrass, coral reef, kelp bed ecosystems

**Kneib, R. T.**
Marine Institute, The Univ. of Georgia, Sapelo Island, GA 31327, USA
Population and community dynamics of estuarine fishes and invertebrates; growth and mortality during early life of estuarine species; evaluation of coastal wetlands

**Landry, M. R.** Ⓢ
Dept of Oceanography, Univ. of Hawaii, Manoa, 1000 Pope Rd, Honolulu, HI 96822, USA
Food web interactions; zooplankton ecology

**Lawrence, J. M.** Ⓢ
Dept of Biology, Univ. of South Florida, Tampa, FL 33620, USA
Reproduction of invertebrates; nutrition

**Levings, C.** Ⓢ
West Vancouver Laboratory, 4160 Marine Drive, West Vancouver, B.C., Canada V7V 1N6
Estuarine ecology of macrobenthos and fish

**Lewis, J. B.**
Dept of Biology, McGill Univ., Stewart Biology Bldg, 1205 Dr. Penfield, Montreal, Quebec, Canada H3A 1B1
Coral-reef ecology; tropical marine biology

**Lewis, M. R.**
Dept of Oceanography, Dalhousie Univ., Halifax, N.S., Canada B3H 4J1
Biological oceanography; phytoplankton physiology; modelling of physical and biological processes

**Lobel, P. S.**
Marine Biological Laboratory, Woods Hole, MA 02543, USA
Fish ecology, behavior, biogeography; coral reefs; fisheries and oceanography

**Luoma, S. N.**
US Dept of the Interior, Geological Survey, Water Resources Div., 345 Middlefield Rd, Menlo Park, CA 94025, USA
Feeding ecology of deposit feeders; geochemistry of trace elements in sediments

**Marcus, N. H.**
Dept of Oceanography, Florida State Univ., B-169, Tallahassee, FL 32306-3048, USA
Zooplankton ecology; biology and genetics of invertebrate populations; rhythms

**Mauchline, J.**
Scottish Marine Biological Ass., Dunstaffnage Marine Research Laboratory, PO Box 3, Oban, Argyll PA34 4AD, Scotland
Deep-sea ecology; radioactive pollution

**Nelson, D. M.**
College of Oceanography, Oregon State Univ., Oceanography Admin. Bldg 104, Corvallis, OR 97331, USA
Phytoplankton ecology; nutrient cycling

**Newell, S. Y.** Ⓢ
The Univ. of Georgia, Marine Institute, Sapelo Island, GA 31327, USA
Ecology of fungi and bacteria; decomposition

**Nybakken, J.**
Moss Landing Marine Laboratories, California State Univ., PO Box 450, Moss Landing, CA 95039-0450, USA
Ecology of molluscs; community structure of soft-sediment invertebrates

**Oviatt, C. A.**
Graduate School of Oceanography, Univ. of Rhode Island, Narragansett, RI 02882-1197, USA
Systems ecology; primary production; nutrient and carbon cycling; role of higher trophic levels; impact of pollutants on coastal systems

**Pawlik, J.**
The Univ. of North Carolina at Wilmington, Wilmington, NC 28403-3297, USA
Ecology and biology of invertebrate larvae; settlement; recruitment; life histories; dispersal; natural products

**Peterson, C. H.** Ⓢ
Institute of Marine Science, Univ. of N. Carolina at Chapel Hill, 3407 Arendell Street, Morehead City, NC 28557, USA
Marine benthic ecology; population biology

**Platt, T.**
Marine Ecology Laboratory, Bedford Institute of Oceanography, PO Box 1006, Dartmouth, N.S., Canada B2Y 4A2
Phytoplankton ecology; primary production

**Purcell, J. E.** Ⓢ
The Univ. of Maryland Systems, Center for Environmental and Estuarine Studies, PO Box 775, Cambridge, MD 21613, USA
Zooplankton ecology and behavior; trophic dynamics; prey selection. Competition for space among benthic invertebrates

**Rassoulzadegan, F.** Ⓢ
Station Zoologique, BP 28, F-06230 Villefranche-sur-Mer, France
Microbial ecology (food webs, microbial loop); pico- and nanoplankton; planktonic flagellates and ciliates; carbon flux

**Reise, K.**
Biologische Anstalt Helgoland, D-25992 List/Sylt, Germany
Benthos ecology

**Rivkin, R. B.**
Ocean Sciences Centre, Univ. of Newfoundland, St. John's, Nfld, Canada A1C 5S7
Microbial ecology; polar planktonic processes; lower food web dynamics

**Savidge, G.**
The Queen's Univ. of Belfast, Marine Biology Station, The Strand, Portaferry, Co. Down, Northern Ireland
Phytoplankton ecology; primary production; photosynthesis

**Scheltema, R. S.** Ⓢ
Woods Hole Oceanographic Institution, Woods Hole, MA 02543, USA
Invertebrate larval ecology

**Schneider, D. C.** Ⓢ
Newfoundland Institute for Cold Ocean Science, Memorial Univ. of Newfoundland, St. John's, Nfld, Canada A1B 3X7
Dynamics of large organisms; ecology of sea birds

**Sherr, B. & E.** Ⓢ
College of Oceanography, Oregon State Univ., Oceanography Admin. Bldg 104, Corvallis, OR 97331, USA
Microbial food webs; trophic roles of phagotrophic protozoans

**Southward, A. J.**
Plymouth Marine Laboratory, Citadel Hill, Plymouth PL1 2PB, England
Rocky-coast ecosystems; deep-sea ecosystems

**Stoecker, D. K.** Ⓢ
Horn Point Environmental Laboratories, PO Box 775, Cambridge, MD 21613, USA
Microzooplankton particularly ciliates; secondary production

**Stoner, A. W.**
Caribbean Marine Research Center, 805 East 46th Place, Vero Beach, FL 32963, USA
Shallow-water benthic ecology; associations between marine macrofauna and macrophytes; predator-prey relations;

**Tenore, K. R.** Ⓢ
Chesapeake Biological Laboratory, PO Box 38, Solomons, MD 20688-0038, USA
Benthic ecology and bioenergetics; production; food chains of detritus-based systems

**Thayer, G. W.** Ⓢ
Ecosystem Structure Branch, Southeast Fisheries Center, Beaufort, NC 28516-9722, USA
Wetlands ecology, incl. submerged seagrasses and emergent marshes; production and utilization of detritus

**Underwood, A. J.** Ⓢ
School of Biol. Sci., Univ. Sydney, Zoology Building, Sydney, NSW 2006, Australia
Experimental intertidal and subtidal ecology; behavior; life cycles of sessile invertebrates

**Wangersky, P. J.** Ⓢ
SEOS, Univ. of Victoria, PO Box 1700, Victoria, B.C., Canada V8W 2Y2
Organic matter in sea water; theoretical population dynamics; geochemistry; chemical oceanography

**Warwick, R. M.**
Plymouth Marine Laboratory, Prospect Place, West Hoe, Plymouth PL1 3DH, England
Structure and functioning of benthic communities; meiofaunal ecology; energy flow

**West, J. A.**
School of Botany, Univ. of Melbourne, Parkville, Victoria 3052, Australia
Reproductive dynamics of red algae; fine structure and parasites of algae

**Williams, R.**
Plymouth Marine Laboratory, Prospect Place, West Hoe, Plymouth PL1 3DH, England
Plankton ecology; community structure, population dynamics

**Wu, B. L.**
First Institute of Oceanography, State Oceanic Administration, PO Box 98, Qingdao, People's Republic of China
Ecology and morphology of coelenterates, echinoderms and polychaetes. Development and reproduction of polychaetes and phoronids

## OCEAN MANAGEMENT

**Ahmed, S. I.**
School of Oceanography, WB-10, Univ. of Washington, Seattle, WA 98195, USA
Biofouling; application of biotechnology to marine systems

**Bernhard, M.**
ENEA, PO Box 316, I-19100 La Spezia, Italy
Radioactive and conventional pollution

**Brown, B. E.**
Dept of Biology, The University, Newcastle-upon-Tyne NE1 7RU, England
Effects of man-made and natural disturbances on coral reefs

**Eisler, R.**
US Dept of the Interior, Fish and Wildlife Service, Laurel, MD 20708, USA
Toxicology and pollution

**Elliott, M.** Ⓢ
Dept of Applied Biology, Institute of Estuarine and Coastal Studies, The University, Hull HU6 7RX, England
Marine pollution assessment and control

**Fisher, N. S.**
Marine Sciences Research Center, State Univ. of New York, Stony Brook, NY 11794-5000, USA
Pollutant effects on plankton; radioecology

**Fowler, S. W.** Ⓢ
International Atomic Energy Agency, Marine Environment Laboratory, 19, Ave des Castellans, BP 800, MC-98012 Monaco Cedex
Pollution effects on zooplankton; radioecology

**Gray, J.** Ⓢ
Institutt for Marinbiologi og Limnologi, Univ. Oslo, Postboks 1064, Blindern, Oslo 3, Norway
Pollution effects on benthos animals

**Luoma, S. N.**
US Dept of the Interior, Geological Survey, Water Resources Div., 345 Middlefield Rd, Menlo Park, CA 94025, USA
Bioaccumulation of trace contaminants (principally trace elements and radionuclide waste products)

**Mauchline, J.**
Scottish Marine Biological Ass., Dunstaffnage Marine Research Laboratory, PO Box 3, Oban, Argyll PA34 4AD, Scotland
Radioactive pollution

**McLusky, D. S.** Ⓢ
Dept of Biological Sciences, Univ. of Stirling Stirling FK9 4LA, Scotland
Biological effects of pollutants (petro-, chemical, organic enrichment)

**Peterson, C. H.** Ⓢ
Institute of Marine Science, Univ. of N. Carolina at Chapel Hill, 3407 Arendell Street, Morehead City, NC 28557, USA
Fisheries management and ecology

**Polikarpov, G. G.**
Institute of Biology of South Seas, Academy of Sciences Uk. SSR, 2, Nahimov St., Sevastopol 335000, Ukraine
Chemical ecology, radioecology, radiotracers, pollution; protection of sea life

**Sherman, K.** Ⓢ
US Dept of Commerce, NOAA, Northeast Fisheries Center, 28 Tarzwell Dr., Narragansett, RI 02882, USA
Fisheries ecology; fishery resources; zooplankton

**Wu, B. L.**
First Institute of Oceanography, State Oceanic Administration, PO Box 98, Qingdao, People's Republic of China
Effects of pollutants on benthic organisms

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